

ABSTRACT OF THE DISCLOSURE

5 Nucleic acid encoding four novel immunodeterminant
protein antigens of M. bovis BCG, which is a vaccine
strain for tuberculosis, have been isolated. These
genes were isolated as immunoreactive recombinant
clones from a genomic library of M. bovis BCG DNA,
10 ~~constructed in pBR322 vector, and screened with sera~~
~~collected from tuberculosis patients. The BCG DNA~~
~~insert of one of the recombinants, pMBB51A, which~~
~~expressed~~ an antigen of Mr 90 kD, ~~was sequenced~~
completely and an ORF encoding 761 amino acids encoding
a protein of deduced molecular weight 79 kD, was
identified. ~~This gene was identified to encode a~~
membrane bound, ion-motive ATPase of M. bovis BCG. The
15 approach described here can be used to identify
immunogens of mycobacteria. ~~In addition, The well-~~
characterized M. bovis BCG antigens can be used in the
prevention, diagnosis and treatment of tuberculosis.
The 79 kD antigen is also useful in the design of
20 recombinant vaccines against different pathogens. The
sequence of the 79 kD membrane-associated polypeptides
also are useful for the development of specific PCR
amplification based diagnostic procedures for the
detection of mycobacteria. ~~Also~~ The promoter of the
25 79 kD antigen is useful for expressing homologous
and/or heterologous antigens in mycobacteria.

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